U. S. Department of Energy

Headquarters Defense Programs

Technical Qualification Program

Self Assessment

(September 17, 1998)

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Executive Summary

This report provides a Self-Assessment of Headquarters Defense Programs implementation of the Technical Qualification Program (TQP), documents the status of the TQP as it currently exists for Headquarters Defense Programs personnel, and provides recommendations concerning the restructuring of that TQP. There are significant issues affecting the staff composition of DP which could adversely affect the ability of the Headquarters DP staff to fulfill technical requirements. These issues must be resolved prior to reestablishing the TQP.

The former DP TQP was suspended on or about November 1997 and the staff supporting the program was disbanded. Efforts have begun to rebuild the TQP consistent with the newly promulgated Implementation Plan for Defense Nuclear Facilities Safety Board Recommendation 93-3. The TQP should be fully reconstituted as soon as practical to support the mission and goals of Defense Programs. Interviews with TQP participants revealed that the past TQP efforts have not measurably improved the level of technical competency. While there may have been sufficient rigor planned for the administration of the program, little of that administration appears to have been effective in proving technical competency.

The former TQP effort had significant weaknesses. The assignment of DP personnel for participation in the program lacked good rationale and did not always support their actual roles and responsibilities. Individual Development Plans (IDPs), training plans, and technical qualification records were not regularly reviewed and approved. There was no process established to objectively, or subjectively measure the technical competency of personnel. There was no apparent consideration given to recognize personnel who hold professional certification requirements. They were required to complete significant portions of the TQP regardless of their training and experience. Personnel-related activities conducted by DP and HR support activities were not fully supportive of the TQP and caused much frustration among the DP staff and TQP participants.

A recent reduction in force (RIF) and the current staff realignment efforts are hampering efforts to reconstitute the TQP. It is not practical to fully accomplish the restructuring of the TQP until the magnitude of these staff revisions are known, however once they are identified, it is recommended that the TQP be reestablished as soon as practical. The first step in revising the TQP is to ensure that clear roles and responsibilities are delineated for those assigned safety management responsibilities. Based on this assignment, the criteria for TQP candidate selection should be promulgated. The newly reconstituted TQP should establish the applicable Office Directors as the responsible line managers for TQP matters. The TQP should be restructured to establish a program of indoctrination, assurance of capability to perform position requirements, and continuing professional development. TQP goals should be included in Individual Development Plans (IDPs) and accomplishment of these goals should be included as a key input for performance appraisals.

1.0 Introduction

This report provides a Self-Assessment of Headquarters Defense Programs implementation of the Technical Qualification Program (TQP) conducted during the period of 11 August 1998 to 3 September 1998. The report documents the status of the TQP as it currently exists for Headquarters Defense Programs personnel and provides recommendations concerning the restructuring of that program to support the objectives and goals of the revised Implementation Plan for Defense Nuclear Facilities Safety Board Recommendation 93-3. The format of the report and the assessment guidance is derived from the *Technical Qualification Program Assessment Guidance and Criteria* established by the Federal Technical Capability Panel dated July 1998. The emphasis of the report is on training programs and not on programs which address retention and recruiting. There are significant activities currently in progress which are modifying the staff composition and alignment. These issues must be resolved prior to reestablishing the DP TQP.

2.0 Scope and Methodology

The initiation of this assessment was directed by Mr Xavier Ascanio of DP-3 and Mr. Victor Stello, the Defense Programs Federal Capability Agent. The Team Leaders for this assessment were Mr. Joseph King and Mr. Kenneth Kellar of DP-45. They were assisted in this effort by Oren Hester and Donald Denier of the Center for Performance Improvement at the Idaho National Engineering and Environmental Laboratory, and Edward Little of Sonalysts, Inc. Karen Frisby, SAIC, who has been assisting the DP training staff from its inception, assisted the assessment team by providing background information and access to training policy, directives, and records.

The team was guided by the objectives and criteria from the *Technical Qualification Program Assessment and Criteria.* These approaches are listed in Attachment One. Since a detailed self-assessment of the Headquarters Defense Programs TQP had been conducted in September 1996, a review of the status of the program since that report was conducted as a baseline to determine progress or program decline. This Self-Assessment Report is attached as Appendix 1. This assessment was reviewed to avoid duplication of effort in this assessment. The results of this review, provided in Section 4.0, are based on the findings of both assessments. Collectively, the two assessments address all the assessment criteria. This assessment is based on the following:

1. Review of the 1996 Assessment results.

2. Interviews of Executive and Mid-Level Managers and DP Staff members.

3. Interviews and discussions with the 1996 assessment team leader and DP training support staff.

4. Limited reviews of program documentation.

Questions used in the conduct of the interviews are provided in Attachment Two. The list of personnel interviewed is shown in Attachment Three.

3.0 Program Status

The DNFSB requested that DOE revise the Implementation Plan for Recommendation 93-3 in April 1997. Efforts to institute the TQP in headquarters DP staff had been in progress since 1994 and as documented in the 1996 Assessment Report, were not achieving the required goals. A listing of Defense Programs TQP training activities is provided in Appendix 2. Records as of November 1997 document that there were 101 participants in the TQP. Twelve participants have left the program or have been reassigned. The overall completion of the TQP designated personnel was reported as 65%. Records of completion may not be entirely substantive, however, and in some cases are estimates provided by the participants. Of the 33 recommendations made in the 1996 assessment report, only four have been acted upon. The remaining 29 recommendations show no evidence of activity.

The DP Training Manager departed in March 1998 and there has been no formally assigned training manager identified as his replacement. Mr. Xavier Ascanio has been informally assigned training manager duties on a collateral basis. The Professional Development Team (PDT) which had been supporting the Training Manager and each of the DP offices has been disbanded. The PDT has not met in over a year. Personnel who had been assigned PDT responsibilities have been reassigned.

A number of recent activities to reconstitute the TQP have been initiated. A revised 93-3 Implementation Plan was signed by the Secretary of Energy in May 1998. Mr. Victor Stello was designated as the Defense Programs Federal Technical Capability Agent and representative to the Federal Technical Capability Program (FTCP) in June 1998. He subsequently established a working group within the DP Headquarters Organization to plan actions required to reconstitute the TQP. This working group has conducted initial planning efforts to define and describe the programs which will be used to reinitiate the TQP. Efforts to date include developing a logic diagram which establishes a TQP process for identifying roles and responsibilities, defining TQP participation criteria, identifying knowledge and skills requirements, and establishing the revised administrative requirements for the program. A series of guidelines to support this effort is under development by the DP working group. These efforts are being integrated with department and HR TQP initiatives.

4.0 Assessment Results

This assessment evaluated the TQP as it exists within DP. As described earlier, this program has essentially been dormant for the past year. It is useful, however, to provide some analysis of that program so that the TQP, when reconstituted, may profit from the recognition of the former TQP's weaknesses and strengths. To identify specific comments which refer to the TQP established under the former 93-3 Implementation Plan, the term "former TQP" is used. To

identify comments which refer to new TQP initiatives under the new 93-3 Implementation Plan, the term "revised TQP" will be used. There are a number of factors which have dictated the progress or lack of progress toward meeting program goals. These factors and the current status of the TQP categorized by weaknesses and strengths are:

Weaknesses

- C DP line managers were not responsible for the development and execution of the former TQP. They were not adequately informed of their roles and responsibilities in the TQP to reinforce their ownership of the program.

- C A recent reduction in force (RIF) and the current staff realignment efforts have had significant impact on revised TQP efforts. For all practical purposes as described above, formal TQP activity has ceased although professional development has continued.

- C The assignment of DP personnel for participation in the former TQP lacked good rationale and did not always support their actual roles and responsibilities.

- C The former TQP did not include a process to objectively, or subjectively measure the technical competency of personnel. Computer based training and testing was developed and instituted, but these efforts were not implemented as a process.

- C There was no apparent consideration given to recognize personnel who hold professional certification requirements. They were required to complete significant portions of the former TQP regardless of their training and experience.
- C Personnel-related activities conducted by DP and HR support activities were not fully supportive of the former TQP and caused much frustration among the DP staff and TQP participants. This frustration continues today in efforts being established to revise the TQP. For example, the process for updating position descriptions (PDs) is considered too bureaucratic and time consuming with the result that PDs are not being updated in a timely manner.

- C A DP Annual Training Plan was never approved and promulgated to support the former TQP. Several draft training plans were prepared.

- C Draft Training Policy and Procedures were prepared but not issued to support the former TQP. A guidance document on exemptions and equivalencies was approved, however, implementation of that guidance was suspended due to the cessation of the TQP.

- C Individual Development Plans (IDPs), supporting the former TQP, were developed for all TQP participants, however, most were not used by the participants, were

not reviewed and approved by supervisors, and are currently not serving any useful function to document achievement or progress toward meeting competency goals.

Strengths

- The former TQP developed several computer based training modules and tests with the intent to permit personnel to conduct training on their own and to validate competencies by satisfactorily passing tests.

- Key DP technical managers were included in the former TQP with the development of the Senior Technical Safety Manager Functional Area Qualification Standard.

- All Office/Facility-Specific Qualification Standards were approved in support of the former TQP. As reported in the 1996 Assessment, these standards reflect 13 Office/Facility specific qualification standards which have commonality. These standards may be useful in developing the new approach to meeting revised TQP goals.

- A specific computer-based tracking system was developed to monitor achievement of program goals in support of the former TQP. This program is user friendly and appears to be effective.

- A number of technical personnel are pursuing advanced degrees.

4.1 Criteria TQP-1, Demonstration of competence. *The program clearly identifies and documents the process used to demonstrate employee technical competence.*

There was no good rationale for assigning DP personnel as participants in the former TQP. The assignment process did not reflect the actual roles and responsibilities of the participants. Some offices enrolled every staff member, while others chose to minimize assignments. At the present time, it is very difficult to determine who should be in the revised TQP due to the current staff realignment efforts. There are a number of potentially positive steps which have recently been taken which may assist the determination of the assignment of safety responsibilities in future efforts. The implementation of Integrated Safety Management Systems (ISMS) and the resulting promulgation of the DOE FRAMs, including the DP FRAM, are steps which clearly define safety management responsibilities. At present there is no good linkage between the assignment of safety roles and responsibilities in the DP FRAM to the manner in which these roles and responsibilities are assigned within the offices. There have been recent attempts to clearly define the criteria to be used to assign personnel to the revised TQP.

The draft criteria recently prepared by DP are listed in Attachment Four. These criteria appear to have merit and when implemented should result in a more consistent application of the TQP.

Individual Development Plans (IDPs), training plans, and technical qualification records have not been reviewed and approved and may require restructuring to be of any use in documenting that personnel are satisfying competencies. The staff formerly in place to establish the records for the program has been disbanded. It will be necessary to establish a new system for accomplishing this documentation and to assign responsibilities for ensuring requirements are met.

There is no process in place to objectively, or subjectively measure the technical competency of personnel. Interviews with Executive Level and Mid-Level Managers revealed that there were no concerns that the staff lacked any of the required competencies. Staff personnel reported that they were confident that they could meet required competency requirements. Discussions with several of the DP staff revealed that competencies are generally met on entry to a position. They reported that the Position Description (PD), if prepared properly, will delineate required competencies in most cases. These competencies can be met by professional certification, documented experience, or educational credentials. A number of personnel defined a process to meet competencies that involved a review of the PD and the associated resume of the person filling that position to determine if competencies were met. Several of the personnel interviewed reported that current PDs are inaccurate and do not adequately define safety management responsibilities. To effectively carry out this cross verification of PDs to resumes would require an extensive review and updating of the PDs. As stated above, this approach, if considered appropriate, will not be possible until the staff realignment efforts are established. Managers interviewed expressed frustration with the difficulty and length of time required to update PDs. It was reported that the DP personnel office has little autonomy when it comes to approving PDs and must gain HR approval for PD revisions. This injects delay and frustration in the process.

4.2 Criteria TQP-2, Competency Levels. *Competency requirements are clearly defined and consistent with applicable industry standards for similar occupations.*

The former TQP process which requires completion of qualification in the General Technical Base (GTB), Functional Area (FA), and Office/Facility Qualification Standards is viewed as a poor model by those interviewed for proving competencies. While these standards were detailed and prescriptive, they are knowledge-based and do not accurately detail what was required to do the work required by the position. Most persons interviewed reported that the former TQP process described above was only serving an administrative function, i.e., a “paper exercise”. Some reported that the standards were useful, but only for ensuring a good understanding of the functioning of the office and for ensuring that the staff was knowledgeable of each members’ job. This process could be

better accomplished by an indoctrination program within each office. It was the overwhelming consensus of those interviewed that the former TQP program had to be restructured significantly. The former TQP process did not adequately recognize the industry standards for similar occupations. It was argued that the Office Director could tailor the existing qualification standards to reflect this concept, but most did not due to the onerous requirements to gain approval for equivalencies.

Personnel interviewed reported that the former TQP process did not always adequately involve the correct subject matter experts (SMEs) within DP. While the standards were developed using table top analyses with SMEs involved, there was reportedly inadequate coordination among SMEs in the development of some of the standards.

There appears to have been little credit given to personnel who hold professional certification requirements in the former TQP. As stated above, the current qualification standards could have been tailored to recognized that concept, but most were not due to extensive administrative requirements. Most personnel interviewed reported that professional certification should be the central part of the revised TQP.

4.3 Criteria TQP-3, Plans and Procedures. *Plans and/or procedures are developed and implemented to govern the administration of the program.*

Interviews of Executive and Mid-Level Managers revealed inconsistent support for the program. Most of these managers had relegated the administration of the former TQP to staff personnel, received little (if any) reports of program status, and delegated responsibility to the DP Training Manager for ensuring the program success. This is most evident in the lack of Executive and Mid-Level Manager's review and approval of IDPs.

After three years the processes and requirements to implement the former TQP were in draft status when these efforts were suspended to accommodate the recasting of the 93-3 Implementation Plan. The revised implementation plan was issued in May 1998. Since then some work has been performed to develop procedures for implementing a revised TQP. However, the guidelines for the revised TQP have not been finalized pending the realignment of the DP organization. The former TQP has been inactive for about a year reportedly due to the impending revision of the 93-3 Implementation Plan. The revised TQP is in the process of being established. Roles and responsibilities for the revised TQP are dependent upon factors that remain in a state of flux. Interviews revealed that most responsibilities for the revised TQP should belong with the line manager responsible for safety matters. That individual is generally the Office Director. When the new program is instituted, there should be a substantial effort to ensure that those involved support the concepts of the program, that the managers are directly involved, and that the details of administering the process are efficient.

4.4 Criteria TQP-4, Qualification Tailored to Work Activities. *The program includes the*

identification of unique Department and position-specific work activities, and the knowledge and skills necessary to accomplish that work.

The former TQP attempted to identify the knowledge, skills, and ability elements to accomplish the duties and responsibilities for each TQP functional area or position, however, it became evident through a number of the interviews that the process did not always include the input of some key SMEs. There is much concern that any new program should involve the correct SMEs and should be drafted with the intent to consider the input of the professionals involved. A number of those interviewed stated that any new program should recognize the professional stature of the current DP staff. Of the staff in technical positions (occupation codes 800 and 1300), all have at least a bachelors degree. Of the 146 personnel assigned technical staff duties, 49 have a bachelors degree, 82 have masters degrees, and 15 hold doctorate degrees. Six are pursuing post-bachelors degrees, three are pursuing post-masters degrees, and two are pursuing post-doctorate degrees. Seven personnel are designated as Professional Engineers, four are Engineers in Training, two are certified safety professionals, and two are certified industrial hygienists. There is one certified geologist and one certified health physicist. The revised TQP program should be structured to recognize that the staff is highly educated and is capable of pursuing learning objectives, if required, on their own. It is also noted that the DP staff is routinely pursuing continuing education and professional development. These efforts include the attendance at technical training courses, DoD sponsored senior executive and officer developmental programs, and graduate fellowships.

The former TQP included an adequate description of the job-specific requirements related to the rules, regulations, codes, standards, and guides necessary to carry out the mission of the office. Some of that informational material should be included in the revised TQP. In view of the educational background of the staff, such material can effectively be addressed by providing the TQP candidate with a list of applicable references and be the subject of personal study.

The former TQP did <u>not</u> support the mission needs of the office. There may be parts of the old program which are beneficial and could be retained. For example, The Office/Facility Qualification Standards may be useful from the stand point of a program of indoctrination for newly assigned staff members. Most Office Managers stated that they should decide what program is followed and they should be given the flexibility to administer it subject to some overarching principles and criteria. It should not be a process that is forced upon them.

4.5 Criteria TQP-5, Credit for Existing Technical Qualification Program(s). *The program is structured to allow credit, where appropriate, for other technical qualification program accomplishments.*

Some offices utilized the flexibility of establishing equivalencies to recognize previous training, education, experience and completion of related qualification/certification programs, when applicable, but that was the exception rather than the rule. The former TQP program contained too many administrative requirements to provide the needed flexibility. Personnel interviewed were unanimous in pointing out these encumbrances and recommending that some flexibility should be provided in the revised TQP. The actual establishment of equivalency, when granted, was not always formally documented in accordance with the requirements of DOE O 360.1, *Training*. The Assessment in 1996 did not conduct a formal compliance review with this order, and this assessment did not pursue this line of inquiry further since the order is being revised. Interviews revealed that Executive and Mid-Level Managers were not fully knowledgeable of the order requirements. Staff members were more knowledgeable but reported that few requirements were met. Interviews revealed that revision of DOE O 360.1 should be conducted with a goal to improve the efficiency of program administration and to minimize requirements.

4.6 Criteria TQP-6, Transportability. *Competency requirements that are identified as having Department-wide applicability are transferable.*

The former TQP appears to have done a thorough job in listing competencies that have been identified as having Department-wide applicability. There are some Functional Area Qualification Standards that are thorough and useful. Interviews revealed that some of these were considered as effective means to alert TQP personnel to key areas to review and master. At issue from the stand point of the TQP participant, is the means to be used to ensure mastery of these areas are documented. Most stated that filling out a qualification card meant little to demonstrate they were competent in that area. It is not clear that the former TQP allowed for ease of transferability, as no one reported that this had been accomplished. Since very few of the former TQP participants actually completed their TQP efforts, it is not clear that transferability will ever be recognized through the program. The issue of transferability is not considered important at this time, however, as it affects the current staff. There are few opportunities to transfer due to the staff reductions and the hiring freeze.

There was an overwhelming dissatisfaction voiced from those interviewed concerning the integration of the former TQP with personnel-related activities such as position descriptions, vacancy announcements, recruiting, and performance appraisals. There is much concern that position descriptions do not serve a purpose of accurately identifying the safety responsibilities. Efforts to induce changes in PDs have been met with bureaucratic delays. There is no evidence that any former TQP related performance or non-performance has been the subject of an entry in the performance appraisals. Interviews revealed that TQP members gave little effort to the former TQP because they have never been held accountable for achieving the TQP goals.

4.7 Criteria TQP-7, Measurable. *The program contains sufficient rigor to demonstrate compliance to the principles.*

Interviews revealed a perception that the former TQP has not measurably improved the level of technical competency. While there may have been sufficient rigor planned for the administration of the program, little of that administration appears to have been effective in proving technical competency. The Senior Technical Safety Manager Program does directly involve proven safety management specialists in the review and approval of competency at the senior level and serves as a good example. Establishment of rigor by the direct involvement of managers and supervisors and their certification of technical competence will have more merit than the extensive and burdensome administrative process used in the past by the former TQP.

The former TQP process has not provided any visible feedback into the improvements of the quality of the program. Ownership of the program was perceived to be external to the Headquarters Defense Program Office Directors. Interviews revealed that response to suggestions for improvements were not always viewed with enthusiasm. The focus of the program had little to do with continuing training, but rather concentrated on the one time completion of knowledge-based requirements.

4.8 Overall Program Summary

The former TQP had significant weaknesses. The assignment of DP personnel for participation in the program lacked good rationale and did not always reflect their actual roles and responsibilities. Individual Development Plans (IDPs), training plans, and technical qualification records have not been reviewed and approved and may require restructuring to be of any use in documenting that personnel are satisfying competencies. There is no process currently in place to objectively, or subjectively measure the technical competency of personnel. There appears to have been little consideration given to personnel who hold professional certification requirements in the former TQP. They were required to complete significant portions of the TQP regardless of their training and experience. Personnel-related activities conducted by DP and HR support activities were not fully supportive of the former TQP and caused much frustration among the DP staff and TQP participants.

5.0 Summary

The former TQP was suspended on or about November 1997. This suspension occurred due to uncertainties affecting staff realignments and the pending reissue of the 93-3 Implementation Plan. The staff supporting the former TQP has been disbanded. There may be useful parts of the former TQP which can be utilized. Draft directives, training materials, and some standards should be evaluated for use in any revised program. The revised TQP should be reconstituted as soon as practical to support the mission and goals

of Defense Programs. The potential staff realignment efforts may play a significant part in redefining the safety management role of the headquarters DP staff organization. This issue directly impacts the ability and timeliness in restructuring the TQP process. If the staff realignment issues are not resolved soon, it may be beneficial to formally request a delay in the efforts to revise the TQP. Once these efforts have been sufficiently defined, however, a headquarters DP TQP recast implementation plan should be drafted and submitted to the Federal Technical Capability Panel along with the results of this assessment to meet the commitment of DNFSB 93-3. The process used to revise the TQP should be developed with the assistance of the Office Directors and should have the approval of the DP Federal Technical Capability Agent, DP-3. The following steps and concepts are recommended as key factors in revising the TQP:

C DP line managers should be the key responsible persons in reestablishing the TQP. They should be held accountable for establishing the requirements to ensure their staff is competent to perform the technical duties assigned.

C Establish clear roles and responsibilities for those assigned safety management responsibilities. In conjunction with the ISMS process, it is recommended that the Headquarters DP FRAM serve as the definitive guidance for the establishment of safety roles and responsibilities. Based on the results of the staff realignments the Headquarters DP FRAM, PDs, and IDPs may require significant revision. The resulting safety management responsibilities should be mapped into specific Office Director safety responsibilities. These efforts should commence as soon as practical, as soon as the magnitude of the staff realignment actions are known, rather than waiting for formally approved revisions to the FRAMs.

C The position as DP Training Manager should be clearly defined and the responsibilities of this office delineated.

C Based on the firm establishment of safety roles and responsibilities, establish the criteria for position identification and TQP candidate selection. The draft criteria of Attachment Four discussed with the Assessment Team is a good approach.

C Direct the Office Directors to compare their staff personnel currently assigned safety management positions with the staff member's resume and experience. Office Directors should be tasked with determining if the staff member has the required competencies to fill that position. Competencies should be demonstrated by professional certifications and/or a demonstrated record of performance and experience. If the Office Director concludes that the staff member is competent, he should annotate that finding in the staff member's IDP. If the Office Director concludes that the staff member does not have the required competencies, he should work with the staff member to develop a plan to attain that competency and so document the resulting plan of action in the staff member's IDP. The plan

should establish the means to demonstrate proficiency and to achieve professional credentials.

- Consider establishing a program for developing basic technical knowledge, technical discipline competency, and office position knowledge, skills, and abilities based on the following three topical approaches:

  (1) Indoctrination. Develop an indoctrination program for personnel assuming safety management roles within DP. This program should serve as a road map for individual study to familiarize personnel with job-specific requirements related to the rules, regulations, codes, standards, and guides necessary to carry out the mission of the office. A lesser program may be of benefit for all newly assigned Headquarters DP personnel.

  (2) Develop Basic Technical Knowledge. Consider the process used to gain unescorted access at a DP facility as a model. The basic training and demonstration of competence required in these programs can serve to develop the required knowledge , skills, and abilities in areas such as radiation protection, occupational safety, chemical safety, nuclear safety, and environmental regulations. Attending the required site training and passing the required written and practical examinations on site may be an efficient way to accomplish this rather than developing new programs at headquarters.

  (3) Professional Development. Establish a program which defines technical discipline competency based on continuing professional development in the designated field. In some cases this may be the attainment of professional certification, attendance at professional seminars, gaining an advanced degree, or attending professional development programs, which in some cases, may be external to DOE. This is a continuing process which affects all DP staff. There may be some positions which are appropriate for identifying as requiring the attainment of qualification as a Project Manager. This qualification should receive emphasis based on the role of headquarters in this key responsibility.

- Establish a formal process, e.g., IDPs, to document the TQP goals, to set the schedule for TQP accomplishment, and to provide a benchmark for performance appraisals. Require an assessment of the attainment of TQP goals in annual performance appraisals.

- Develop Headquarters DP Plans and Procedures to meet the requirements of DOE O 360.1, as revised, and to delineate the administrative details of the newly established TQP.

- Analyze the process for updating position descriptions to identify and correct the causes of delays and difficulties.

Appendix

(1) Self- Assessment of Defense Nuclear Programs Final Report - OVH-52-96 dated September 24, 1996

(2) Defense Programs TQP History

Attachments

(1) Technical Qualification Program Assessment Objectives and Criteria

(2) Federal Technical Capabilities Survey

(3) List of Personnel Interviewed

(4) Defense Programs Technical Qualification Program Position Identification and Candidate Selection Process (Draft)

Appendix One

Self- Assessment of Defense Nuclear Programs Final Report - OVH-52-96 dated September 24, 1996

Appendix Two

Defense Programs TQP History

This is a listing of the major tasks performed by the Defense Programs (DP) training organization in support of TQP activities. It is arranged in chronological order.

1. **Survey of Position Descriptions** - A survey of position descriptions (PDs) in several Offices was conduct in order to identify the tasks performed by DP employees. An analysis of the survey indicated that DP PDs were very generic and did not accurately reflect the tasks performed by employees.
2. **Orders Training Requirements** - A database with the training requirements from four-digit Orders was developed. A freeze on the four-digit Order system and the development of the new three-digit Order system halted any further implementation.
3. **Training and Qualifications Process Action Team** - A process action team was chartered in June 1994 to develop an integrated approach to training. The team included representatives from each Office. A document, *Defense Programs Professional Development Strategy*, was developed by the team to propose an integrated training program and an organization, the Professional Development Team (PDT). The program was not implemented, but the PDT was chartered in September 1995.
4. **Course Catalogue** - DP developed a database matching appropriate courses to qualification standard competencies. Since funding for many of the courses were dropped and no subject matter expert review of the database was conducted, it was not generally used to identify courses.
5. **Individual Development Plans** - A deliverable in the original Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 93-3 Implementation Plan required technical personnel to have individual development plans (IDPs) by October 1994. DP chose to do this electronically in OnTrack. Some of the IDPs that were incorporated into OnTrack at that time were out of date. The electronic IDPs were not signed by the individual and supervisor as required in IDP guidance. There has been no DP-wide initiative to update IDPs yearly or develop IDPs for nontechnical personnel as required by DOE Order 360.1. However, since OnTrack is accessible to all employees, individuals or Office may have updated IDPs.
6. **Table Top Analysis** - Table-Top Analysis sessions were conducted primarily for Offices with Technical Qualification Program (TQP) participants. The analysis was designed to be a three-step process. First, a list of tasks performed by the Office was produced. Each Office generated this list. The second step involved developing a list of the competencies required to perform the tasks and the associated knowledge and skills. This was completed for approximately a third of the Offices. This input was used to develop the final product, an Office-specific qualification standard, that was a deliverable for the original 93-3 implementation plan. DP decided to skip the second

step and just develop Office-specific qualification standards since the commitment was overdue. All Office-specific qualification standards were completed and signed. Although the DNFSB Recommendation 93-3 concerned only safety affecting tasks, DP chose to identify all tasks performed by an Office.

7. **Automated Competency Testing Diagnostic System** - The software was developed to test employees on the qualification standard competencies. The test questions for the General Technical Base Qualification Standard were used by only a few individuals within DP. However, the software was used with other test questions from seminars and interactive television broadcasts.
8. **Lead Site Qualification Standards Study Guides** - In order to develop training materials for the General Technical Base Qualification Standard and all the functional area qualification standards as quickly and cost effectively as possible, the Office of Human Resources and Administration (HR) developed the concept of Lead Sites, each site developing a study guide for one or more of the qualification standards. Some sites developed computer-based training modules or a list of classes to attend. Although the process took some time to begin, approximately 90% of the material is now complete.
9. **DP Qualification Standards Study Guides/Computer-Based Training** - DP began development of their own set of study guides for the qualification standards because of the belief that DP Headquarters had unique needs that would not be reflected in Field produced documents. Approximately 15 study guides were produced in draft, but only two were approved by the appropriate subject matter experts within DP and finalized. Several of the study guides were converted to computer-based training (CBT) modules and are available on the local area network (LAN). The CBT module on the General Technical Base Qualification Standard was reviewed, approved, and publicized. The other ones were never reviewed by subject matter experts or publicized.
10. **Training Policy and Procedure** - The *Training Policy and Procedure* was written and approved by the PDT as required for the TQP. It was then sent to each Deputy Assistant Secretary for signature. The document was never finalized due to failure to coordinate approvals.
11. **Annual Training Plan** - Several draft documents were written as required by DOE Order 360.1, but none were approved.
12. **Annual Training Report** - An *Annual Training Report* was written in 1996 and also in 1997 and sent to upper DP management to publicize training accomplishments.
13. **Learning Center for Leadership** - A program to assess and improve an individual's managerial competencies, the Learning Center for Leadership, was developed. Approximately four sessions were held with DP employees. No Learning Centers have been held in the past year, and no additional training has been offered to participants.
14. **Subject Matter Experts/Qualifying Officials** - A procedure to define a subject matter expert who could function as a qualifying official to confirm the completion of a competency was drafted but never approved.
15. **OnTrack/TQP Tracker** - OnTrack is used to register for classes, maintain the DP course catalogue, develop an IDP, and keep a training history for each employee. Although it has the ability to track competency completion for the TQP, the database

fields, in most cases, are limited to 40 characters or less. So, every qualification standard competency had to be rewritten for OnTrack, and it was difficult to distinguish one competency from another. TQP Tracker was developed by Savannah River Site, had the ability to include complete competencies, and was available for free. So, DP adopted it. All TQP participants, all Office-specific qualification standards, and all exemptions, equivalencies, and justifications from the "Quick Check" forms completed by each participant were included in the database. Employees were given copies of the resulting qualification cards in an IDP notebook. Supervisors were to review the material and sign the qualification card. When an employee participated in a TQP seminar or interactive television course, their participation was captured in the database. When an individual completed a class on a competency and/or passed a test on a competency, the supervisor was to sign the competency on the qualification card as complete. Only DP-13 and DP-24 signed exemptions, equivalencies, and competency completions. DP-21 reviewed at least some of their records. Many of the justifications included in the database for equivalencies were inadequate. DP-45 participants were involved in reviewing their qualification cards and improving their justifications for equivalencies when the TQP was halted.

16. **Training Guidelines** - Because of the difficulty with getting signatures from all the Deputy Assistant Secretaries, DP decided to issue training guidelines signed by the Training Manager rather than procedures. A guideline on exemptions and equivalencies was approved by the PDT and issued. A guideline on the record system was developed but not approved by the PDT and never issued.
17. **Seminar Series** - Using the TQP Tracker database, a list of competencies that require training was developed. These competencies were then grouped together if they contained related subject matter. Next, a seminar was developed by a DP subject matter expert to address the group of competencies. The effort was piloted in DP-24 first to limit its scale. Then, the venture was publicized for all of DP, and about seven or eight seminars were conducted before the TQP effort was halted. As a related effort, the study guide material for several competencies was reprinted in a packet for internal DP use. A DP subject matter expert felt the Field study guide material was incorrect and objected to its use. Also, none of the individuals who received study guide material took a test on the material, and so no more packets were developed.
18. **Senior Technical Safety Manager Qualification Standard** - In response to DNFSB concerns, the Federal Technical Workforce Review Group developed the Senior Technical Safety Manager (STSM) Qualification Standard and identified the STSM positions in DP. DP had to develop a package for each STSM, including their education, experience, and competency gaps, and submit them to the Federal Technical Workforce Review Group for approval. DP's recommendations were approved. DP did not address the issue of STSMs who do not have a technical degree and require compensatory measures pending DP's reorganization. In addition, those STSMs who have competency gaps have not completed any additional training. A program for STSMs was under development when the TQP effort was halted.
19. **Training Resource Center** - Much of the training room material and equipment did

not belong to DP. When it was returned, limited resources existed. When the TQP was halted, an effort was made to improve the training room. It was renamed the Training Resource Room, repainted, recarpeted, new office furniture replaced some of the less usable pieces, a new computer was added, a new floor plan was developed, and new signs were placed on the walls. A database of the materials available in the Training Resource Center was placed on the LAN. Some new material was added to the collection before this endeavor was halted.

20. **Development of a New Training Process** - During the development of the revised 93-3 implementation plan, an effort was made to develop a training process for DP that would be better accepted by DP employees and would not require developing training seminars for a large number of competencies. The process started as an attempt to develop a training program for the non-TQP employees. A needs analysis pilot was conducted with about six DP-40 employees, and then suggested training courses were identified for these secretaries and program analysts. The process was feasible so a TQP pilot with DP-21 was established. A listing of appropriate classes for the tasks performed by DP-21 was identified before this effort was halted.
21. **Development of a New DP TQP** - A flow chart was developed to outline a process for the development of a new DP TQP. A project plan and procedures are being developed to support the flowchart process.

Attachment One

Technical Qualification Program Assessment Objectives and Criteria

TQP-1 Demonstration of Competence: The program clearly defines and documents the process used to demonstrate employee technical competence.

Criteria

1.1 At a minimum, personnel providing management direction or oversight that could impact the safe operations of a defense nuclear facility have been identified as participants in the Technical Qualification Program.

1.2 Individual Development Plans (IDPs), training plans, technical qualification records or other related documents are updated to reflect the activities that each individual shall participate in to salsify competencies.

1.3 A formal evaluation is in place to objectively measure the technical competency of personnel. The rigor of the evaluation process is commensurate with the responsibilities of the position.

TQP-2 Competency Levels: Competency requirements are clearly defined and consistent with industry standards for similar occupations.

Criteria

2.1 Competency requirements include clearly defined knowledge, skill, and ability elements.

2.2 Subject matter experts are involved in establishing competency requirements.

2.3 Consideration of related professional certification requirements is included in the program as applicable.

2.4 Competency requirements are identified in the areas listed below (Note: this does not imply that three separate documents are required).

C Basic Technical Knowledge: This includes basic fundamental knowledge of radiation protection, occupational safety, chemical safety, nuclear safety, environmental regulations, and other areas.

C Technical Discipline Competency: Competency in a technical discipline (e.g., mechanical engineering, chemical engineering) which can be demonstrated by

education, professional certification, examination or on-the-job performance.

C Position Knowledge, Skills, and Abilities: Specific to the position and the office.

TQP-3 Plans and Procedures: Plans and/or procedures are developed and implemented to govern the administration of the program.

Criteria

3.1 The Technical Qualification Program has the commitment of senior management.

3.2 Written procedures that adequately define the processes and requirements to implement the Technical Qualification Program are in place.

3.3 Roles and responsibilities for the implementation of the Technical Qualification Program are clearly defined and understood by all involved.

3.4 The procedures that govern the implementation of the technical Qualification Program are understood by all involved, and are being implemented as written.

3.5 A training and qualification records system is established for each employee in the Technical Qualification Program.

TQP-4 Qualification Tailored to Work Activities

Criteria

4.1 An analysis has been performed to identify the related knowledge, skill, and ability elements to accomplish the duties and responsibilities for each Technical Qualification Program functional area or position.

4.2 The program includes job-specific requirements related to the rules, regulations, codes, standards, and guides necessary to carry out the mission of the office.

4.3 The program supports the mission needs of the office.

TQP-5 Credit for Existing Technical Qualification Program(s): The program is structured to allow credit, where appropriate, for other technical qualification programs accomplishments.

Criteria

5.1 Credit (equivalency) is granted for previous training, education, experience and completion of related qualification/certification programs, where applicable.

5.2 Equivalency is granted based upon a review and verification of objective evidence such as transcripts, course certificates, test scores or on-the-job experience.

5.3 Equivalencies are validated, approved and documented in a formal manner.

TQP-6 Transportability: Competency requirements that are identified as having Department-wide applicability are transferable.

Criteria

6.1 The program includes all of the competencies that have been identified as having Department-wide applicability.

6.2 Formal documentation of the completion of Department-wide competencies is maintained in a manner that will allow for easy transferability.

6.3 The Technical Qualification Program is integrated with personnel-related activities such as position descriptions, vacancy announcements, recruiting, and performance appraisals.

TQP-7 Measurable: The program contains sufficient rigor to demonstrate compliance to the principles.

Criteria

7.1 The technical competency of personnel who have completed the requirements of the Technical Qualification Program is adequate and appropriate.

7.2 The program allows for continuous feedback and periodic evaluation to ensure that it meets the needs of the Department and the mission(s) of the office.

7.3 The Program includes the provisions for continuous training.

Attachment Two

Federal Technical Capabilities Survey

The following questions are based on the four principles (stated below) promulgated in the DOE *Revised Implementation Plan for Improving DOE Technical Capability in Defense Nuclear Facilities Programs.*

TQP PRINCIPLES

1. Federal personnel possess the experience, knowledge, skills and abilities that are necessary to discharge their safety responsibilities (from ISMS Guiding Principles).

2. Line managers are accountable and have the responsibility, authority, and flexibility to achieve and maintain technical excellence.

3. Support organizations (personnel, training, contracts, finance, etc.) recognize line managers as customers and effectively support them in achieving and maintaining technical excellence.

4. An integrated corporate approach is necessary to assure that necessary technical capabilities and resources are available to meet the overall needs of the Department's defense nuclear facility missions.

EXECUTIVE LEVEL QUESTIONS

PRINCIPLE 1

1. When you assumed your current position, were you aware (knowledgeable) of 93-3?

2. Was it explained to you?

3. How do you understand it today?

4. In what ways does your staff affect safety of nuclear facilities?

5. Are you aware of DP's existing TQP and implementation of TQP within your organization?

6. What is your understanding of your organization's status regarding TQP implementation?

7. Are there aspects of the DOE or DP TQP that are effective and worth maintaining in the future? (GTB--ok? FAs--ok? Office std--ok?)

8. Do you feel you had control over the implementation of the TQP within your organization?

9. How would you like to see the DP TQP revised?

10. Have the right people within your organization been identified as participants in the TQP?

a. Do you feel confident your staff had the necessary experience, knowledge, skills and abilities to discharge the responsibilities of their position?

b. What lead you to that conclusion?

c. Did that opinion change over time? If so, what factors impacted your change of mind?

d. If there were staff for whom you had reservations, did you have recourse to improve your situation by any of the following?

1. Retrain
2. Reassign
3. Dismiss

11. What place does the Federal TQP have in meeting this principle for your staff?

12. Are there other mechanisms that your rely upon to assist or fully meet the principle above?

13. Are you confident that your staff has the necessary experience, knowledge, skills and abilities to discharge the responsibilities of their positions, and if so, why?

<u>PRINCIPLE 2</u>

1. Are you in any way accountable for the implementation of 93-3? For implementing requirements such as IDPs and PDs?

2. If you needed to replace or get additional expertise, could you have

1. Matrixed someone with the necessary experience, knowledge, skills or abilities you needed? If not, why not?
2. Detailed someone from another department or office?
3. Hired a new employee?

3. Did you have the flexibility to put together a staff that met the goals of your office in terms of their technical competence?

<u>PRINCIPLE 3</u>

1. Are roles, responsibilities, and functions clearly established between your organization and

support organizations?

2. In light of a shrinking budget and a change of mission, if the staff you inherited did not meet your expectations for technical competence, how would you like to have handled putting together a staff who did?

3. How could the DOE's support organizations help you?

PRINCIPLE 4

1. How is the TQP being implemented in DP? What or who is guiding it? Where should the program be institutionalized?

MID-LEVEL MANAGEMENT QUESTIONS

PRINCIPLE 1

1. How does the Federal TQP help establish that there is the experience, knowledge, skills and abilities necessary to adequately manage nuclear defense facilities?

2. Are there other mechanisms that you rely upon to assist or fully meet the need for establishing that there is experience, knowledge, skills and abilities among the federal staff?

3. In what ways does your staff affect safety of nuclear facilities?

4. Are you confident that your staff has the necessary experience, knowledge, skills and abilities to discharge the responsibilities of their positions, and if so, why?

5. Do the Position Descriptions reflect what is being done by the staff?

6. Is your Individual Development Plan current? Does it address evolving missions and technology?

PRINCIPLE 2

1. Are you in any way accountable for implementation of 93-3? For implementing requirements such as IDPs and PDs?

2. What motivates you to pursue increased technical capability?

3. Who in your staff is in the TQP and what criteria is applied to whether or not your staff is included?

4. How is the TQP administered within your organization?

5. If the TQP is not utilized by your staff, how is technical direction and decision making managed relative to the mandates of 93-3?

6. What expectations are there for continuing training related to technical excellence for your organization?

PRINCIPLE 3

1. How are support organizations providing support to achieve and maintain technical excellence for your staff?

2. What kind of specific tasking have you placed on these support organizations to assist you in meeting this principle?

3. Are roles, responsibilities, and functions clearly established between your organization and support organizations?

PRINCIPLE 4

1. Are appropriate positions included within the TQP throughout DP to meet your office's mission needs?

2. What are those positions within your organization and within DP that you rely upon?

3. What assessment or feedback mechanisms are available to you in order to influence the direction that the Department may take to address shortfalls in this area?

4. How is the TQP being implemented in DP? What or who is guiding it?

5. What resource and capability shortfalls are identified within your organization and how are those needs presently identified to senior management?

6. How does your organization utilize technical capabilities and resources that are external to

your federal staff?

7. Is the level of technical competence to support your office's needs adequate? Has this been achieved or aided by the TQP? If there is inadequate technical competence, what recommendations to improve the TQP{ are necessary to meet your needs?

8. Where should the program be institutionalized?

STAFF LEVEL QUESTIONS

PRINCIPLE 1

1. Is the TQP that you are in necessary to support the safety responsibilities of your line manager or your line manager customer?

2. What lead you to that conclusion?

3. Has the TQP improved your technical competence? Is DP's technical competence improved as a result of the TQP? Is DP's current technical competence adequate and why?

4. What recommendations can you make to establish a TQP that will meet the needs of DP for the purpose of establishing and maintaining technical competence?

5. Do the position descriptions accurately reflect program requirements? Does each position description implement or execute the mission of your organization to which the employee is assigned?

PRINCIPLE 2

1. How does your line manager determine your technical excellence?

2. In your assigned area(s) of responsibility, are there training or development weaknesses that you are working on? Are these identified in your IDP?

3. Do you have reasonable access to the required technical support?

4. Does your work affect the safety of nuclear facilities? How? If not, should it?

PRINCIPLE 3

1. Do you rely upon support organizations to achieve and maintain your technical excellence? If so, how is that done?

2. Are there ways that support organizations could better serve you in this area?

PRINCIPLE 4

1, Was the 93-3 concept of technical qualification explained to you?

2. How do you understand the concept as it applies to you personally and as it applies to DP?

3. Concerning the initial TQP, what should be retained and what changes would you propose?

Attachment Three

List of Personnel Interviewed

1. Aiken, Phil	DP-24	Staff
2. Cooperstein, Ray	DP-45	Staff
3. Ives, Gene	DP-20	Executive
4. Johnson, Sam	DP-24	Staff
5. Kimball, Jeff	DP-45	Mid-Level Manager
6. LeClaire, David	DP-40	Executive
7. Miotla, Dennis	DP-13	Mid-Level Manager
8. Rhoades, Dan	DP-24	Mid-Level Manager
9. VanFleet, James	DP-10	Executive
10. Weidner, John	DP-23	Mid-Level Manager
11. Winter, Jim	DP-45	Staff
12. Harvey, Don	DP-45	Staff
13. King, Joseph	DP-45	Mid-Level Manager

Attachment Four

DP-HQ Participation Criteria

In order to have an appropriately targeted program, the participating positions must be carefully selected. The following definition and subsequent analysis will be used as the selection criteria for TQP participation.

> Federal positions shall be included in the DOE HQ-DP TQP if responsibilities include the technical management or inspection of defense nuclear facilities or programs and whose actions (duties and responsibilities) could have a direct impact on the safety of the public, the worker, and the environment.

Responsibilities for technical management of defense nuclear facilities or programs with regard to having a direct impact on the safety of the public, the worker, and the environment, and include, but are not limited to the following:

- Approve safety basis or authorization basis documents. (e.g., Safety Analysis Report, Basis for Interim Operation, Technical Safety Requirements, Unreviewed Safety Question Determination Process, etc.)
- Approve integrated safety management system descriptions, or corrective action plans designed to address worker safety, public health, or environmental protection, at defense nuclear facilities.
- Approve DOE, site, and/or program specific policies, Orders, standards, manuals, handbooks, procedures, or guides, associated with worker safety or protection of the public and environment.
- Provide technical direction for the performance of operational or safety related tasks.
- Staff positions that have leadership roles in the above matters.

Responsibilities for leadership of technical oversight or inspection of nuclear facilities, programs, and/or individuals who provide technical oversight of nuclear facilities and/or programs with regard to safety include but are not limited to the following:

- Assess contractor performance with regard to operating safety, worker and public protection, or environmental protection, associated with defense nuclear facilities or programs.

- Assess the performance of federal staff who provide technical oversight of Management and Operating (M&O) contractor performance with regard to operating safety, worker and public protection, or environmental protection, associated with defense nuclear facilities or programs.

- Ensure adequacy of M&O contractor developed implementation plans or corrective action plans designed to address safety, health or environmental issues at defense nuclear facilities or relating to defense nuclear programs.

- Develop oversight or assessment criteria to be used for the evaluation of M&O contractor operations or safety performance at defense nuclear facilities or under the scope of defense nuclear programs.

Other individuals shall be included in the DP Technical Qualification Program if their duties, as determined by their supervisor, could impact the safe operation of a defense nuclear facility.